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Patent Application of

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Charles G. Heisinger, Jr.  
for

TITLE: METHOD AND SYSTEM FOR TELEPHONICALLY SELECTING,  
ADDRESSING, AND DISTRIBUTING MESSAGES

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## BACKGROUND

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### Field of the Invention

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The present invention relates to a method and system for retrieving information in response to caller input from a telephone keypad and for delivering the information to an address specified by destination address information maintained through an Internet website and stored in a database, which is selected based on caller identification provided electronically with the inbound telephone call, and in a distribution means specified by the caller.

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### Description of Prior Art

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At the present time, the applicant is unaware of any existing prior art method or system utilizing an Internet website as its registration and administration means and a database as its address routing means that would enable a user to respond to a

mass media advertisement or other announcement by simply dialing a phone number and entering a "keycode" (a code which identifies the particular advertisement offer), with the identification of the caller provided by the ANI (automatic number identification) of the calling phone.

To date, direct-response mass-media advertising has relied primarily on a variety of direct response methods, such as manned 800 numbers. These methods do not permit the responder to simply, quickly, and automatically specify how and by what means additional information will be sent to the responder. Where direct response requires payment information, this information must be located by the caller and correctly communicated over the phone, often a laborious and error-filled process.

When responding to an advertisement by accessing information on an interconnected network, such as the Internet, the user is required to have a certain amount of knowledge regarding an Internet website address, or URL--uniform resource locator, before the user can successfully access a particular website. If the user does not input the exact URL, punctuated correctly, access will be denied and the user will need to resort to a sometimes lengthy and laborious search process to determine the correct address for the site. Given the present volume of advertising which includes a brief mention of an advertiser's website address, remembering a particular advertisement for a site may be difficult, thereby decreasing the probability of further investigation of an advertiser's products or services. The demands of precise and accurate URL addressing as a requirement for accessing the Internet creates a barrier for most people to take full advantage of this information source.

Prior art systems overcome this problem through the use of Internet search engines to help users determine the correct URL for a website from a selection of sites that have been selected

based on key words. Once the user has input key words, summaries of websites and their associated URL's are presented for selection. By selecting a particular URL, the user is linked to the chosen website.

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Internet and online service providers, such as AOL, may also offer keywords for advertisers to include in their ads. These keywords are theoretically easier for a user to remember than the www.website.com combination. Keywords, however, must be remembered from the time the individual hears them to the time of Internet access, which in a majority of cases is not immediate. As URL's, keywords are also subject to spelling and punctuation mistakes.

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#### SUMMARY

In accordance with the present invention, a method and system for telephonically selecting, addressing, and distributing messages is disclosed that uses an automatic process to handle the tasks of creating and sending a message to an address that is stored in a database by a user through an Internet website. The body of the message is identified through use of a keycode, which is supplied by an advertiser or other promoter through a media channel, such as radio, TV, or print. Where the message constitutes an order to purchase, the caller's payment information, such as a credit card number, may be transmitted as part of the message.

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#### OBJECTS AND ADVANTAGES

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It is therefore an object of the present invention to provide a method of utilizing automatic phone number identification and entered keycode information for direct response purposes in mass-media advertising.

It is yet another object of the present invention to provide a method for selecting, addressing, and distributing an electronic message through the convenience and use of a telephone.

- 5 It is yet another object of the present invention to provide a method to communicate user payment information to an advertiser as part of a purchase transaction.

It is yet another object of the present invention to provide a  
10 method for accessing specific Internet websites where the URL  
-b information may be provided to the user via fax, e-mail, postal  
mail, delayed voice mail, or accessed from a web site.

Yet another object of the present invention is to provide a  
15 convenient method of registration, administration, and  
maintenance of a user's address and payment information through  
an Internet website and a database accessed through said website.

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Briefly, a method for accessing advertising messages through the  
20 use of a telephone and the associated dual tone multifrequency  
(DTMF) signals is disclosed. The preferred embodiment of the  
present invention provides a system that compares the ANI of an  
inbound telephone call with an address previously input by the  
user in a database through an Internet web site. Specific stored  
25 messages are retrieved from a database by the user through the  
use of DTMF signals as generated from a telephone key pad. Upon  
receiving a DTMF signal with delivery information, the message is  
sent either via fax, email, postal mail, time-delayed voice mail,  
or stored on a data table which is accessible through a web site,  
30 depending on the option specified by the user. Payment  
information, such as a credit card number, may be included with  
the message.

One advantage of the present invention is that it provides a message for reminding the user of the user's interest in information, including, but not limited to a company's website.

5 Yet another advantage of the present invention is that it provides accurate address and contact information, including, but not limited to, information about a website address.

Yet another advantage of the present invention is that it allows  
10 the user to select the distribution method of the message, be it fax, e-mail, postal mail, delayed voice mail, or web site.

Yet another advantage of the present invention is that it allows  
15 the user to communicate accurate payment information to an advertiser when the message is a purchase order.

Yet another advantage of the present invention is that it provides easy access to registration and account maintenance functions through an Internet website.

20 Brief Description of the Drawings

Fig. 1 is a block diagram that illustrates the hardware components of one embodiment of the present invention.

Fig. 2 is a block diagram that shows call processing elements  
25 according to the present invention.

Fig. 3A is a screen print that illustrates a Internet Registration Web Page for entering user data into an address data table.

Fig. 3B is a diagrammatical view that shows the structure of an  
30 address data table according to the present invention.

Fig. 3C is a diagrammatical view that shows the structure of a message data table according to the present invention.

Fig.s 4 & 5 are flow charts illustrating the step-by-step operation of one embodiment of the present invention.

Detailed Description of a Preferred Embodiment

As required, a detailed illustrative embodiment of the present invention is disclosed herein. However, telephone techniques, physical communications systems, data formats, operating systems, operating structures, and network environments in accordance with the present invention may be embodied in a wide variety of forms and modes, some of which may be quite different from those in the disclosed embodiment. Consequently, the specific structural and functional details disclosed herein are merely representative.

A system according to the present invention may be comprised of a multitude of scaleable sub-systems as follows--1) a communications server, such as a Sun Sparc Station 20 operating at 75 mhz with Solaris 2.4 optimized for communications or the equivalent and including distributed message databases run on Oracle 7 database management software or the equivalent, with the following peripherals: a bank of digital signal processors capable of interactive voice response, such as a Dialogic D/320SC or the equivalent with voice message software; 2) a Printer and SMTP (Simple Mail Transfer Protocol) Server, Sun Sparc Station 5 operating at 110 mhz or the equivalent, with email mailing software, connected directly to the Internet and a local printer, such as a Sun NeWSPrinter 20 or the equivalent, 3) a Fax Server, such as a Sparc Station 5 operating at 110 mhz or the equivalent, connected to a switch that is connected to a telephone network; 4) a router, such as a Cisco 2500 series router connecting all of the servers described thus far. The sub-system is connected, to a Wide Area Network (WAN), such as an ATM or Asynchronous Transfer Mode network or the equivalent. The WAN connects multiple sub-systems through a router, such as a Cisco 2500 series router, to a central address database server, such as a Sun SparcServer 1000E operating at 85 mhz or the equivalent. The database server features Oracle relational database management software, or the equivalent, and scalable 1 GB fast/wide SCSI disk drives in a Raid 5 storage configuration.

The database server is connected to an Internet Web server, such as a SparcStation 20 running at 75 mhz with Web Hosting Software, through a Common Gateway Interface program. The Internet Web Server is connected to the Internet. The network operating system is Sun Solaris or the equivalent. System administration is provided by a workstation connected to each sub-system.

Another embodiment of the present invention could exist in a PC environment--a PC with 500 Mhz Intel Pentium III CPU or the equivalent, with 512 K Cache, 128 meg of memory, 3 gigabytes of disk space, Internet software including an email program and web hosting software, Internet port and dedicated subscriber line or the equivalent, fax software, 56kb modem and dedicated fax line or the equivalent, digital signal processor capable of interactive voice response (Dialogic Proline/2 V or the equivalent) and telephone line, printer, Windows 2000 or the equivalent, and Relational Database Management System (RDBMS), such as Microsoft Access would suffice.

Referring to Fig. 1, one embodiment of the present invention is operated by a caller 100 using a telephone on a public switched telephone network 102 to dial into telephonic interfacing software and hardware on the communications server 104. The server 104 provides audio directions to the caller 100 and provides a number of options, which may be selected by the caller 100 through DTMF tones generated through the use of a telephone keypad. In this manner, the caller 100 is able to direct the communications server 104 to perform certain procedures. The procedures include accessing address data tables and files located on a database server 110. Data tables on this server 110 are maintained by Internet 114 access through an Internet Web Server 112. The procedures also include accessing message data tables and files located on the communications server 104. These files are updated from data tables on database server 110, which

is connected to the communications server 104 through a WAN 108 and routers 128 and 106.

One available procedure is to send an email message through a  
5 Printer & SMTP server (Simple Mail Transfer Protocol--outgoing  
mail server) 124 to the Internet 114. Another available action  
is to send a facsimile via fax server 116 through a switch 118  
and to a telephone network 120. Yet another option is to send a  
voice message through a switch 118 over a telephone network 120.  
10 Yet another option is to send a message to a data file on the  
Printer and SMTP Server 124 for later input to the US Postal  
printer 126. Yet another option is to send a message to the  
database server 110 for access from the Internet 114 through  
Internet Web Server 112.

15 Fig. 2 shows the call processing, message retrieval, and  
addressing function, without regard to the specific hardware on  
which the files and programs exist. An Interactive Voice Response  
System 202 guides a caller through a series of call menus via  
20 voice prompts and plays confirmations of DTMF tones which the  
caller enters from the caller's touch-tone keypad of a telephone  
200. The caller-generated DTMF tones are converted into ASCII  
values usually by the Interactive Voice Response system 202 and  
then stored by the CPU 204 in memory 210. In other embodiments,  
25 the conversion from DTMF tones to ASCII text is performed by  
either a modem with call-management features or by a voice modem  
and Telephone Application Program Interface, or TAPI, software.

The Interactive Voice Response System 202 responds to the inbound  
30 call ANI and caller's touch tone selection for distribution, or  
routing, instructions and initiates a look-up of the address data  
table 206. It retrieves the stored destination address  
information for the message. The Interactive Voice Response  
System 202 also responds to the caller's touch tone selection for  
35 the keycode of the desired document by directing the CPU 204 to



look up and retrieve the corresponding message file name in the message data table 208. Once the CPU 204 has located the selected message file and address, it routes the message file and destination address to either fax software 216 for faxing, an Internet email program 218 for transmission over the Internet as an email message, voice message software 212 for transmission over a telephone network, as an output data file 214 for later printing as postal mail, or as a datatable 220 for later access through a website. The CPU 204 will recognize an order to purchase message from the presence of an advertiser address in the message data table 208. The CPU 204 will create a second message including credit card information addressed to the advertiser. .

Fig. 3A illustrates an Internet registration web page for entering user data into an address data table according to the present invention. The form requests the user name 300, an originating phone number 302, which serves as the primary index key for the address data table, and a pin # 304 for system security. The form requests an email address 306, a fax phone number 308, a voice phone number 310, a US postal address 312 including city, state and zip code information 314, and credit card number and expiration date information 315. These four address requests are destination addresses for the distributed messages. The credit card information is payment information for inclusion in purchase order message. The form can be submitted 316 to the Internet Web Server 112 and then on to the database server 110 for saving, or canceled 318 by clicking on the appropriate button.

Fig. 3B and 3C are views of data tables of a relational database according to the present invention.

Fig. 3B shows the structure of an address data table according to the present invention. The address data table 319 contains an

originating phone number as the primary key 320 and a delivery option as a secondary key 324. Together, these keys form a unique key index to the table. Additional columns in the address data table 319 include the pin # 322, the user name 325, credit card number 326, credit card expiration date 327, and the destination address 328. Each row of the table 319 is uniquely identified by a composite of the originating phone number 320 and delivery option 322.

Fig. 3C shows the structure of a message data table 329 according to the present invention. The primary key field of this table 329 is the keycode 330. The secondary key is the delivery option 332. Together, these keys form a unique key index for the table 329. Column 334 references the name of the message file. Column 336 indicates the address of the advertiser, where the message is a purchase order. Each row of the table 329 is uniquely identified by a composite of the keycode 330 and delivery option 332.

## OPERATION

### Registration and Storage of User Information on an Internet Website

Referring to Fig. 3A, to register as a user of the system, an individual must visit a web site and enter their name 300 and a calling or originating phone number 302 along with a pin # 304 on the registration web page 301. The individual must also input one or more of the following: an Internet e-mail address 306, a fax telephone number 308, voice phone number 310, or a US postal address 312 with city, state, and zip code information 314, and credit card number and expiration date 315. These addresses become the destination addresses for the information messages. Upon submission, the Internet Web Server uses a CGI program to

append the information to a row in the address data table 319 for each destination address that has been entered on the form. The primary key index of the address data table 319 is the originating phone number 320 and the secondary key index value is a delivery option 324 which is defined as follows: 1= Internet e-mail address and web site access, 2= fax phone number, 3= voice message phone number, 4= US Postal Address (including delimited city, state, and zipcode information). Each row of the address data table 319 contains a primary 320 and a secondary key index 324, a pin # 322, the user name 325, credit card number 326, credit card expiration date 327, and one destination address 328.

#### Creation of Information Message Content

Messages are created and loaded onto a database server 110 by advertisers and informational sponsors of the system. The messages may assume several different file formats, each suitable for a different method of distribution. For instance, one message may appear as ASCII text for emailing and as a tagged image file format, or .tif, for faxing. The messages may be loaded by over the Internet 114 and through the Internet Web Server 112 using a file transfer protocol (FTP) or by manual means, such as diskette. In addition to loading the formatted files, the message data table 208 must be appended with a row containing the following information: Keycode (Primary Key Index of the table) of the message 330, Delivery Option (Secondary Key Index of the table) 332, the file name of the formatted file 334, and the advertiser address 336. The data server 110 sends copies of the updated datatable 208 and the messages over the WAN 108 and routers 106 and 128 to the communications server 104, where identical distributed copies of the message datatable 208 and message files reside.

#### User Telephone Interface

Figs. 4 & 5 chart the steps necessary to operate a system according to the present invention. Users must register to use

the system. Step 400 is accomplished on an Internet registration web page form, where a user enters user information, an originating phone number, pin #, and desired destination addresses and credit card information. The Internet Web Server  
5 sends this information to be appended to the address data table on the database server. In step 402, advertisers and suppliers of information content must upload their information files to the database server, either via the Internet or by other media, such as diskette. Copies of messages and the updated message table are  
10 copied to the communications server.

Once the user has registered and the information providers have loaded their information content, the system is ready for operation. The caller obtains the system phone number and  
15 Keycode from a mass-media advertisement or other announcement 404. The system phone number may be a local number, an 800 number, or even a 3 digit number along with an additional digit, such as 411 plus the #, or pound sign. In the case of a 411 number, the pound sign is known as a "cut-through" digit and  
20 would "cut-through" a telephone company switch which is part of the Public Switched Telephone Network to access a computer server for the caller. The caller places a call to the system in step 406.

25 In step 408, the ANI, more commonly known as caller ID, will be transmitted at the beginning of the call to the Interactive Voice Response system and is stored in memory. The address data table is then looked-up to determine if the ANI exists as a Primary Key Index value 410. If it does not, the caller will be prompted to  
30 enter a phone number which is a valid, registered, originating phone number and a valid pin # 412.

The Interactive Voice Response system, generates a voice prompt, asking the caller for a keycode associated with the information  
35 that the caller desires 414. The caller inputs the keycode 416.

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In step 418, the Interactive Voice Response system captures the DTMF keycode response and converts it to an ASCII value to be stored by the CPU in memory. The system will then prompt the caller for the desired means of distribution in step 500. The caller will indicate a choice represented by pressing a digit on the keypad in step 502. In step 504, the Interactive Voice Response system will capture the DTMF response and convert it to an ASCII value and direct the CPU to store the value in memory. The incoming call is then terminated 506. The CPU will select a destination address from a row of the address data table where the Primary Key Index Value is equal to the originating phone number in memory and the Secondary Key Index Value is equal to the Delivery Option 508. In step 510, the CPU selects the file name of the message by looking up the row in the message data table where the Primary Key Index Value is equal to the stored Keycode value and the Secondary Key Index Value is equal to the Delivery Option stored in memory. If the message data table contains an advertiser address, the message is considered a purchase order and a second message will be created with credit card information and addressed to the advertiser. The CPU determines the routing of the message from several conditional program statements 512, 514, and 516. Depending on the stored value of the delivery option, the destination address and a file stored in the communications server with the selected file name are sent to the input queue of one of the delivery software subsystems: the Internet email program and web site data table 518, the fax transmission software 520, voice message software 522, or the US Postal mail software 524. The send function of the appropriate delivery subsystem is then initiated: the SMTP Internet e-mail program 526, the fax transmission software 528, voice message software 530, or the US Postal mail software 532.

#### Conclusion, Ramifications, and Scope:

Accordingly, the reader will see that the method and system for telephonically selecting, addressing and distributing messages

described here represents a major enhancement for mass-media audiences to gain information about products, services, and information content.

5 Furthermore the present invention provides the following advantages:

• it permits convenient access to additional product news and information content, by means of the nearest telephone.

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• it provides fast and easy access, through a minimal number of digits entered through a telephone keypad.

• it permits wide user choices in delivery of information.

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• it permits easy and accurate purchasing capability for advertised goods and services.

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• it yields accurate information in printed or verbal form, especially concerning website addresses.

• it provides non-human 24 hour, 7 day per week, means of registration and database updates.

25 Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. For example, the telephone may be wireless and the distribution methods may  
30 include paging systems.

Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.